Wisconsin, Univ. College of Agricul-
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Sowing the Seed in the Garden

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State Horticultural Society
Frederic Cranefield, Secretary
in cooperation with
Extension Service of the College of Agriculture, University of Wisconsin,
K. L. Hatch, Assistant Director
(Approved by the State Council of Defense)

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Sowing the Seed

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Seed sowing usually proves a stumbling block to the beginner in gardening. He gets along very nicely after the plants are up but his trouble lies in getting them started.

There are apt to be many vacant rows in the beginner's garden, while the gardener waits impatiently for the plants to appear and blames the seedsman for selling him poor seeds. In most cases the seed is all right; the trouble lies with the planter. **More failures result from improper planting of seeds than from poor seeds.**

Part I. The Art of Seed Sowing

Making a Seed Bed:

For best results the soil must be mellow, moist and fine, and free from lumps. If the surface has dried since plowing or spading and is lumpy it will pay to turn over two or three inches of the surface soil with a spading fork so as to have a moist and mellow bed for the seeds. Then rake and rake again until the surface soil, for a depth of at least two inches, is fine and mellow. In this connection let us quote from Circular No. 4.

"It is very important that the soil be in the best possible condition before

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seeds and plants are put in. No amount of after cultivation will make up for careless work in the first preparation of the garden."

Have Straight Rows:

Rows should be straight, not alone for the sake of appearance but for convenience in cultivating. In small gardens the garden line is most practical. Hemp rope of clothesline size, is excellent. Use strong stakes that can be driven with the back of the spade. With the line drawn taut make a furrow, deep or shallow according to size of seeds, using a pointed stick or end of hoe handle.

Dropping the Seed:

To sow seeds by hand evenly is an art that can be acquired only by considerable experience. If, in the beginning, the seeds are poured from the paper packet into a cup, both temper and seeds may be conserved. The cup is not apt to blow away and spill the seeds.

Grasp a pinch of seeds between the thumb and forefinger and scatter with a rolling motion. That's about all that can be set down in print about it; the rest must be learned from experience. The expert will space seeds by this method as evenly as a seed drill and without apparent effort.

The amount of seed to sow was briefly discussed in Circular No. 2. No hard and fast rule can be given. Better use too much seed than too little.

Cover the seeds with the back of the rake, pushing lumps aside when possible so as to cover only with fine soil.

Now press the soil firmly over the seeds either by stepping lightly along the row, one foot only, or patting firmly with the back of the hoe. **This is held the most important step in seed sowing.** After firming the soil **rake** lightly to form a mulch.

Marking the Rows:

Set pegs or stakes at both ends of rows as soon as seeds are covered. In this way the space between the rows may be hoed or raked to keep down weeds before the plants appear. The best time to kill weeds is just before they appear and a light hoeing or raking within a week after seed sowing may save much backache later.

It may be a matter of comfort and certainly will serve as a guide for operations another season if the variety and the date of planting is written heavily in pencil on the head stake of each row.

These directions and cautions as to careful preparation of soil have particular reference to small seeds like lettuce, radish, turnip, and onion, as these need a fine seed bed. Larger seeds such as beet and spinach will come through very well if the soil is not quite so fine, but they will appreciate the better treatment.

In making furrows for peas, beans and corn use a corner of the hoe. Practice counts here also.

Depth of Planting:

"Seeds should not be planted deeper than is necessary to insure the proper degree of moisture."—Goff. If we keep in mind that the reason we cover seeds with soil is to insure the moisture

essential for germination it helps us greatly in determining the proper depth for planting.

The depth of planting may be regulated largely by the size of the seed. Large seeds may be planted deeper than small ones. (One important exception to be noted later.)

No definite rule can be given. Any table giving in inches or fraction of an inch the depths at which seeds should be planted is misleading, for so much depends on the texture and tillage of the soil, the amount of moisture it contains, the date of planting and other variable factors. One rule, subject to many exceptions, is to cover seeds three to five times their diameter (thickness).

Small seeds like carrot, lettuce, radish, cabbage and turnip ought to be covered with one-fourth to one-third inch of soil. If the soil is very light (sandy) they ought to be planted a little deeper to insure moisture sufficient for germination. Beet, spinach and parsnip may be covered deeper, one-half inch if the soil is not too heavy. Peas and corn should be covered with about two inches of soil, beans not over one inch. Beans lift the seed above ground and if planted too deep will break their necks in the effort to get through. For this reason something is to be gained by planting in hills; that is, four to six seeds in a place, these a foot apart. If planted singly, space 1½ to 2 inches apart. Do not plant peas in "hills" but singly, about an inch apart.

Odds and Ends:

A "hill" in garden language does not mean an elevation but refers to a number of seeds planted in a group rather than singly in a row.

Cucumbers, melons, squash, and so forth, are commonly planted in hills by the market gardener for convenience in cultivation. There is no good reason for doing it in the small garden. Plant the seeds flatwise 1 to 2 inches apart, the plants to be thinned later, and cover one-half inch deep.

Seeds planted in midsummer for succession crops, should be covered somewhat deeper than when planted in the spring, in order to insure needed moisture. The soil will be more mellow and warmer than in the spring—both factors favoring germination.

Peas as well as corn and others of the "grass" family will push through greater depths of soil than beans and others that project the seed or seed leaves above the ground.

Germination (sprouting) of seeds may be hastened by soaking in water 24 to 36 hours before planting. Soaked seeds should not be allowed to become dry before planting.

The potato is not a seed and scarcely anything here written applies to it. Cut the potatoes into pieces, each having one or more "eyes" or buds, and plant the pieces singly 10 to 12 inches apart in furrows 4 to 6 inches deep.

Part II

Reasons for Some of the Operations Described in Part I

Every seed contains an embryo plant. In order to germinate (sprout) and produce a living plant three things are essential—moisture, warmth and air (oxygen). If any one of these is lacking, seeds will fail to germinate. If any one of these essentials is not present in sufficient amount, germination will be tardy. It is very important that seeds should germinate promptly or else decay will result.

Seeds absorb water promptly when placed in contact with it. In the soil the promptness and rapidity with which seeds absorb moisture will depend upon the points of contact. If the soil is not pressed closely about the seed but few points are in contact with it and a long time will be required for it to germinate. Therefore, we tramp the soil over the seed with the foot or hoe. By this means we also increase the capillarity or water pulling power of the soil, for moisture passes readily through soil particles which are in close contact and less readily when the soil is loose.

The proper degree of warmth is essential. This varies with the species but the variation is not wide.

Seeds of the common garden vegetables will germinate readily at a temperature of 50 to 55 degrees. Lettuce and radish will germinate at lower temperature, 45 to 50 degrees. Peas will germinate at 32 to 40 degrees.

Cucumber and squash seed require 60 degrees.

These figures are close to the minimum or lowest temperature. The most favorable temperatures are 5 to 10 degrees higher in all cases. It is useless, therefore, to plant seeds in soil that is too cold.

Water drives air out of the soil. Working wet soil "puddles" it, shutting out air. Seeds will not germinate in soil that is too wet and will germinate very slowly in puddled soil.

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Published and distributed under Act of Congress, May 8, 1914, by the Agricultural Extension Service of the College of Agriculture of the University of Wisconsin, the United States Department of Agriculture cooperating.